

Application No.: 09/899,994
Amendment under 37 CFR 1.111
Reply to Office Action dated June 14, 2004
September 14, 2004

AMENDMENTS TO THE CLAIMS

Please substitute the following claims for the pending claims with the same numbers respectively:

Claim 1 (Currently amended): A signal processing device which decodes a data stream which includes a first audio data and a second audio data sampled at different respective sampling frequencies of fs_1 and fs_2 , where $fs_1 < fs_2$, comprising:

~~a decoder which is inputted said data stream and separates for receiving and separating said data stream into said first audio data and said second audio data and for outputting said first audio data and said second audio data;~~

~~a filter which, among said first and second audio data outputted from said decoder, performs for performing re-sampling upon said first audio data at the same sampling frequency fs_2 as that of said second audio data, and suppresses suppressing aliasing distortion due to said re-sampling, and for outputting said first audio data from said filter; and~~

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~~a delay unit which, among said first and second audio data outputted from said decoder, delays for delaying said second audio data by a delay period equal to a processing period due to said filter, and for outputting said second audio data concurrently with said first audio data.~~

Claim 2 (Original): A signal processing device according to claim 1, wherein said decoder separates said data stream, processing unit thereof corresponding to said processing period in said filter, into said first and second audio data having original sampling frequencies, respectively.

Claim 3 (Original): A signal processing device according to claim 1, wherein signal processing delay time in said filter corresponds to a predetermined processing unit of inputted audio data.

Claim 4 (Currently amended): A signal processing device according to claim 1, wherein said filter comprises:

~~a re-sampling circuit which, among the first and second audio data which are outputted from said decoder, performs for~~

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performing re-sampling upon said first audio data having said sampling frequency ~~of~~ fs_1 at said sampling frequency fs_2 as that of said second audio data; and

an FIR filter which suppresses aliasing distortion in said first ~~of~~ audio data.

Claim 5 (Currently amended): A signal processing device according to claim 1, wherein said second ~~stream of~~ audio data includes at least audio data for a forward right channel and audio data for a forward left channel.

Claim 6 (Currently amended): A signal processing device according to claim 2, wherein said second ~~stream of~~ audio data includes at least audio data for a forward right channel and audio data for a forward left channel.

Claim 7 (Currently amended): A signal processing device according to claim 3, wherein said second ~~stream of~~ audio data includes at least audio data for a forward right channel and audio data for a forward left channel.

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Claim 8 (Original): A signal processing device according to claim 1, wherein said sampling frequency fs_1 is one of 48 kHz and 44.1 kHz, and said sampling frequency fs_2 is twice as high as said sampling frequency fs_1 .

Claim 9 (Original): A signal processing device according to claim 2, wherein said sampling frequency fs_1 is one of 48 kHz and 44.1 kHz, and said sampling frequency fs_2 is twice as high as said sampling frequency fs_1 .

Claim 10 (Original): A signal processing device according to claim 3, wherein said sampling frequency fs_1 is one of 48 kHz and 44.1 kHz, and said sampling frequency fs_2 is twice as high as said sampling frequency fs_1 .

Claim 11 (Currently amended): A signal processing device according to claim 1, wherein:

 said second ~~stream of~~ audio data includes at least audio data for a forward right channel and audio data for a forward left channel;

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said sampling frequency fs_1 is one of 48 kHz and 44.1 kHz;
and

said sampling frequency fs_2 is twice as high as said
sampling frequency fs_1 .

Claim 12 (Currently amended): A signal processing method
which decodes a data stream which includes a first audio data and
a second audio data sampled at different respective sampling
frequencies of fs_1 and fs_2 , where $fs_1 < fs_2$, said method comprising
the steps of:

~~a decoding step of inputting said the data stream and
separating said the data stream into said the first audio data
and said the second audio data and outputting the first audio
data and the second audio data;~~

~~a filtering step of, among said first and second audio data
outputted from said decoding step, performing the first audio
data by re-sampling upon said first audio data at the same
sampling frequency fs_2 as that of said the second audio data, and
suppressing aliasing distortion due to in the first audio data
obtained following said step of re-sampling, and outputting the
first audio data; and~~

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~~a delay processing step of, among said first and second audio data outputted from said decoder, delaying said the second audio data by a delay period equal to a processing period due to said step of filtering step to output the second audio data concurrently with the first audio data.~~

Claim 13 (Currently amended): A signal processing method according to claim 12, wherein said step of decoding step separates ~~said the data stream, processing unit thereof corresponding to said processing period in said filter step,~~ into said the first and second audio data having original sampling frequencies, respectively.

Claim 14 (Currently amended): A signal processing method according to claim 12, wherein ~~said a processing period in said step of filtering step~~ corresponds to a predetermined processing unit of inputted audio data.

Claim 15 (Currently amended): A signal processing method according to claim 12, wherein said step of filtering step comprises:

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~~a re-sampling step of, among the first and second audio data outputted from said decoding step, performing re-sampling upon the first audio data having said the sampling frequency of fs1 at the said same sampling frequency fs2 as that of the second audio data;~~ and ~~a filtering step of~~ suppressing aliasing distortion in said the first audio data.

Claim 16 (Currently amended): A signal processing method according to claim 12, ~~wherein said further comprising the step of providing the second stream of~~ audio data ~~includes~~ with at least audio data for a forward right channel and audio data for a forward left channel.

Claim 17 (Currently amended): A signal processing method according to claim 12, wherein said step of filtering includes using the sampling frequency fs1 is from at least one of 48 kHz and 44.1 kHz, and said step of delaying includes using the sampling frequency fs2 which is twice said the sampling frequency fs1.

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Claim 18 (Currently amended): A signal processing method according to claim 12, ~~wherein: said further comprising the step of providing the second audio data includes with~~ at least audio data for a forward right channel and audio data for a forward left channel;

~~said and wherein step of filtering includes using the sampling frequency fs1 is from at least~~ one of 48 kHz and 44.1 kHz; and

~~said step of delaying includes using the sampling frequency fs2 which is twice as high as said the sampling frequency fs1.~~

Claim 19 (Original): An optical disk reproducing device which reproduces multi-channel audio signals using a signal processing device according to claim 8, when reproducing an optical disk upon which said first and second audio data, which have been sampled at respective different sampling frequencies fs1 and fs2 with $fs1 < fs2$, have been recorded as a single stream of audio data.